A cardiovascular programme led by nurses cost between £5.08 and £5.78 per patient per 1% reduction in coronary risk

Wonderling D, McDermott C, Buxton M, et al. **Costs and cost effectiveness of cardiovascular screening and intervention: the British family heart study.** BMJ. 1996 May 18;312:1269-73.

Objective
To determine the costs and cost-effectiveness of a cardiovascular screening and intervention programme led by practice nurses (British Family Heart Study cardiovascular screening and intervention programme).

Design
Cost-effectiveness analysis of data from a randomised controlled trial (British Family Heart Study).

Setting
13 general practices in the United Kingdom.

Patients
2011 men aged 40 to 59 years and their 1425 partners participated in the intervention group. The control group consisted of 2174 men and 1402 women.

Intervention
A nurse-led programme using a family-centered approach, with follow-up according to degree of risk for cardiovascular disease.

Main cost and outcome measures
Overall reduction in coronary risk derived from the Dundee risk score, mean cost of the cardiovascular screening and intervention programme, and mean cost per 1% reduction in the coronary risk. Unit costs were estimated from external sources. An overall difference in mean cost was calculated by pooling cost differences across the 13 practices.

Main results
The intervention reduced the relative risk (RR) for cardiovascular disease by 12%. The mean direct programme cost per patient screened was £63.14 (95% CI £60 to £65). 66% of the cost came from the nurses' time. The mean overall short-term cost to the health service was £76.89 per man (CI £29.33 to £124.45) but only £12.85 per woman (CI –£48.04 to £73.75). The difference in overall short-term cost between men and women was because of differences in utilisation of other health service resources. The mean direct programme cost per 1% reduction in coronary risk was £5.08 per man and £5.78 per woman.

Conclusion
The estimated direct cost of a cardiovascular screening and intervention programme per 1% reduction in coronary risk per patient was between £5.08 and £5.78.

Sources of funding: Family Heart Association; Merck Sharp and Dohme; Fife Health Board; Boehringer Mannheim UK; Wessex Regional Health Authority; Health Education Authority; Scottish Home and Health Department; Department of Health.

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Commentary (continued from page 30)

increased after a health check and that 31% of those with a high cholesterol concentration were prescribed lipid-lowering drugs. When these costs were incorporated in a subanalysis, it appeared that average prescription costs were used, an approach that is likely to underestimate the actual costs of lipid-lowering drugs.

Both studies expressed their cost-effectiveness results in terms of a cost per 1% reduction in coronary risk score, thereby restricting comparison with other health interventions. However, the research groups that were involved in these studies have combined their efforts to produce another article that reports costs per life-year gained by using a life-table approach to convert reductions in risk into reductions in coronary deaths (2). If the duration of risk reduction is assumed to be confined to the trial, the intervention does not appear to be cost-effective; but if the effect is assumed to continue for at least 5 years, the results become more impressive. Hence, both studies were too small and of too short duration to give unambiguous evidence about the cost-effectiveness of practice-based cardiovascular screening. Similar shortcomings probably afflict the other studies on the topic that are referred to in the combined paper (2). Reliable evidence on long-term effectiveness and costs is still awaited, and this must be recognised when evidence-based decisions are made.

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References

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Special Clinical Note

The 5-year risk for a cardiac event can be estimated (from the Framingham study and other data) to be about 2.7% for the average woman participating in the Oxcheck Study and about 6.3% for the average man participating in the Oxcheck Study. A 1% relative risk reduction (RRR) in each yields a number needed to treat (NNT) of 3700 for women and 1600 for men to prevent 1 cardiac event. Individual patients, however, may be more likely to reap a 10% RRR (NNT 370 for women and 160 for men), and if interventions were limited to high-risk persons (for example, with risks of 20%), the NNT could be as low as 50 for either group.

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